

WHAT IS CLAIMED IS:

1. An noise reduction circuit for an RF front end system comprising:
 - a. a controller circuit
 - b. a user interface connected to the controller circuit that provides user input to the controller which indicates the user's selection of an RF channel;
 - c. a RF tuner; and
 - d. a programmable filter that receives a signal from the RF tuner and filter program settings from the controller and then filters the signal from the RF tuner based on the filter program settings;
 - e. wherein the program settings for the programmable filter determined by the controller depend on the RF channel selected by the user.
2. The circuit of claim 1 further comprising a switched mode power supply that supplies power to the circuit and a source of unwanted noise.
3. The circuit of claim 1 wherein the programmable filter is a digital filter.
4. The circuit of claim 3 wherein the digital filter outputs a filtered digital signal to a digital amplifier.

5. The circuit of claim 3 wherein the digital filter outputs a filtered digital signal to an D/A converter, and an analog signal from the D/A converter is amplified by an analog class A/B amplifier.
6. The circuit of claim 3 wherein the digital filter outputs a filtered digital signal to an D/A converter, and an analog signal from the D/A converter is amplified by an analog input class D amplifier.
7. The circuit of claim 3 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band.
8. The circuit of claim 3 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band and RF channel.
9. The circuit of claim 1 wherein the programmable filter is a programmable switched capacitor filter.
10. The circuit of claim 9 wherein the programmable filter outputs a filtered analog signal to an analog input class D amplifier.

11. The circuit of claim 9 wherein the programmable filter outputs a filtered analog signal to an analog amplifier.
12. The circuit of claim 9 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band.
13. The circuit of claim 9 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band.
14. The circuit of claim 9 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band and RF channel.

15. An noise reduction circuit for an RF front end system comprising:
- a. a controller circuit
 - b. a user interface connected to the controller circuit that provides user input to the controller which indicates the user's selection of an RF channel;
 - c. a RF tuner; and
 - d. a programmable filter incorporated in a DSP that receives a signal from the RF tuner and filter program settings from the controller and then filters the signal from the RF tuner based on the filter program settings;
 - e. wherein the program settings for the programmable filter determined by the controller depend on the RF channel selected by the user.
16. The circuit of claim 15 further comprising a switched mode power supply that supplies power to the circuit and a source of unwanted noise.
17. The circuit of claim 15 wherein the digital filter outputs a filtered digital signal to an D/A converter, and an analog signal from the D/A converter is amplified by an analog class A/B amplifier.

18. The circuit of claim 15 wherein the digital filter outputs a filtered digital signal to an D/A converter, and an analog signal from the D/A converter is amplified by an analog input class D amplifier.
19. The circuit of claim 15 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band.
20. The circuit of claim 15 wherein the program setting for the programmable filter are determined by characterizing the noise of the circuit in operation for each RF band and RF channel.